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REMARKS

Claims 1-7 are pending. By this response claims 1 and 4 have been amended. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Examiner Interview

Applicants thank the Examiner for granting an interview with Applicants' representative. During the interview the Examiner stated that Ashibe taught the main features of the present invention and specifically the determination of the best interpolation technique from amongst a plurality of techniques. The Examiner argued that Ashibe teaches determination of a thinning ratio for a block of pixels but he stated that this is accomplished by determining an interpolation method of existing good pixels within those blocks of pixels that best thins the block of pixels. The Examiner stated that to do this requires performing interpolation on a good pixel and making a comparison with the interpolated signal and the original signal value to obtain the distortion throughout the block of pixels. The Examiner stated that even though the process is performed for a block of pixels, it is necessarily performed on the individual pixels within the block of pixels and a comparison of the pixel values within the block of pixels is made in determining the best thinning process. The Examiner stated that the below translated section of Ashibe provides this teaching:

> "Specifically, with the present embodiment, four thinning and interpolation methods are allocated to each block, namely (a), (b), (c), and (d) shown in FIG. 3, and thinning is performed according thereto, thereby performing band compression. For convenience of description, (a), (b), (c), and (d) are called mode 1, mode 2, mode 3, and mode 4, respectively, below.
> When an image signal is first input on the transmission side, thinning and interpolation for each mode are performed (1).
> Next, the total sum in the blocks of the absolute values of the discrepancies between the interpolated signal and the original signal, or in other words distortion amounts, D2, D3 and D4 for each mode in each block, are calculated. Since the thinning ratio is the same, namely ¾, for both mode 3 and mode 4, selecting either mode 3 or mode 4 will not affect the compression ration for the overall image. Accordingly, mode 3..."

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Because Applicant's representative had not previously seen this translation and thus this specific reference section, Applicant's representative and the Examiner did not reach an agreement and Applicant's representative stated he would have to study the translation in more detail.

Rejections

Claims 1-6 stand rejected under 35 U.S.C. §103(a) in view of Ashibe et al. (JP363122385) in view of Zhang et al. (US 7,136,541) and Jiang (US 7,242,819); and also claim 7 under 35 U.S.C. §103(a) in view of Ashibe, Zhang, Jiang and Saver et al. (US 5,418,714). These rejections are respectfully traversed.

Claims 1 and 4 have been amended to further clarify the distinction between these claims and the cited prior art Ashibe, Zhang and Jiang.

Based on the comments in the Office Action and the interview with the Examiner it appears that the Examiner is arguing that Ashibe teaches determination of an interpolation method using existing pixels (good pixels), although the process of Ashibe is performed for each block but not for each pixel. In Ashibe, the thinning method is determined using good pixels within the block. It may therefore be said that Ashibe determines an interpolation method using good pixels.

Furthermore, in Ashibe different interpolation techniques (a), (b), (c), and (d), as shown in FIG. 3, are performed on the same block of pixels but not necessarily on the same pixels within those blocks. Thus, at the pixel level one good pixel may only be interpolated using one technique and not all techniques.

In contrast, embodiments of the present invention differ from Ashibe in that the embodiments of the present invention determine an interpolation method for "an interpolation pixel" using "non-interpolation pixels." Although Ashibe "determines an interpolation method using good pixels," it interpolates the block which has been used for determining the interpolation method. On the other hand, the invention of the present application determines the best interpolation method for an interpolation pixel by interpolating "non-interpolation pixels" which are not (actually) to be interpolated and which neighbor the interpolation pixel, as "test pixels," and then interpolates "the

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interpolation pixel" using the determined interpolation method.

Moreover, because an interpolation method is performed on each block each pixel does not receive the same interpolation. As is seen by the illustration of (a), (b), (c), and (d) while a specific pixel in a block is interpolated in one technique, a second technique may require use of different pixels within that block and not that same pixel interpolated in the first technique. Thus, while a comparison is thus made of the original signal with an interpolated signal this is not necessarily accomplished for the same pixel within the block under each of the interpolation methods performed by Ashibe.

Thus, the interpolation determination is done at the pixel level for each lost pixel by determining the best technique from amongst a plurality of interpolation techniques using good pixels. Each technique is performed on the same good pixel and only after the evaluation is a specific technique chosen and then the interpolation value using that technique used for a the lost pixel. Thus, the best technique for a lost pixel is determined using neighboring good pixels, whereas Ashibe teaches determining the interpolation technique based on good pixels in a block of pixels and not determined for a selected lost pixel. Furthermore, each interpolation technique may not be performed on a single pixel within the block.

At best Ashibe teaches determination of a thinning technique using all good pixels within a block and not necessarily the same pixels for each technique. Once this technique is determined reconstruction is performed based on this determination, thus there is no teaching of selecting an interpolation technique for a lost pixel using adjacent good pixels.

Further, Zhang fails to remedy the deficiencies of Ashibe. Zhang teaches obtaining different absolute pixels values for different pixels located in different edge directions. This teaching details how a single method may be implemented using one or more means. It does not teach using a "different interpolation method." The same method is used only implemented in one or more ways by software, hardware or a combination thereof. Thus, Zhang does not teach using different interpolation methods and selection thereof.

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Zhang does not teach or suggest calculating interpolation candidate data by obtaining test interpolation data from repeating an analysis of the same good pixels under different interpolation methods and then comparing the results of a test interpolation data from amongst those obtained. In contrast, Zhang et al. teaches a single method in which multiple edge directions are used in obtaining interpolated pixel values for comparison proposes.

Furthermore, Jiang fails to remedy the deficiencies of Ashibe and Zhang. Jiang merely teaches the use of independent circuitry to perform specific tasks, but fails to teach or suggest the deficiencies noted above with respect to Ashibe and Zhang.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the rejections.

Conclusion

For at least the above reasons Applicants respectfully submit claims 1-7 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings, Registration No. 48917 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

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   If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: January 18, 2011
   (Tuesday After Holiday)

Respectfully submitted,

By_____
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